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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,359	02/12/2002	Atsushi Hayakawa	CU-2845	5741
26530	7590	12/23/2003		
LADAS & PARRY 224 SOUTH MICHIGAN AVENUE, SUITE 1200 CHICAGO, IL 60604				
			EXAMINER CONLEY, SEAN E	
			ART UNIT 1744	PAPER NUMBER

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/074,359

Applicant(s)

HAYAKAWA ET AL.

Examiner

Sean E Conley

Art Unit

1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2002 and 10 June 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 9-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, Claims 1-8 and 17 in the response filed November 5, 2003 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor

and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hada et al. (5,879,648) in view of Raniwala (Patent Pub. US 2002/0085971).

Regarding claims 1-4 and 7, Hada et al. discloses an apparatus and method for disinfecting containers. The apparatus comprises a disinfectant chamber (12) which includes a preheating zone (35), and exposure zone (36) and a drying zone (37). The preheating zone (35) supplies hot air to the container in order to preheat the container prior to a supply of disinfectant mist. Since the nozzles aren't specifically inserted into the openings of the containers, the step of preheating includes heating the entire container as well as the mouth portion. The exposure zone (36) supplies a hydrogen peroxide mist into the interior of the containers through nozzles (42). After the mist has been applied the containers are injected with hot air at the drying zone (37) through nozzles (44) in order to heat and dry the containers. In the drying zone (37), the hydrogen peroxide is rapidly removed by drying from the surfaces of the containers (see column 1, line 38-column 2, line 28, column 3, lines 6-60 and column 4, lines 1-21).

Hada et al. does not teach the step of rinsing an inside of the container after discharge of the mist therefrom.

Raniwala discloses a bottle sterilization system and method. The method comprises introducing a sterilizing agent in the form of atomized liquid droplets into the surface of a bottle to be sterilized. Once contacting the bottle surfaces, these droplets form a thin liquid film thereon. The film is maintained on the surface for a sufficient time and in sufficient concentration so that the sterilizing agent reduces the micro-organism concentration on the surfaces to a desired level of sterility (see paragraph [0007]). The atomized droplets may be introduced in various physical states including but not limited to a fog, a nebula, a vapor, a mist or an aerosol suspension (see paragraph [0008]). After the sterilizing agent is allowed to remain on the surfaces for sufficient time the residual sterilant agent is then removed from the bottle. This can be performed by rinsing the bottle with water, either by spraying the bottle with rinse water or immersing the bottle in a water bath (see paragraphs [0011] and [0012]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Hada et al. to include the step of rinsing the inside of the containers after the discharge of the mist in order to further remove any residual sterilant that may remain in the bottle as taught by Raniwala.

Regarding claims 5 and 6, Hada et al. does not specifically disclose step of a prescribed leaving time after supplying the disinfectant mist, before starting to discharge the mist from the container. However, the method of Hada et al.

takes place on a conveyor system thus resulting in a prescribed leaving time between the exposure zone (36) and the drying and discharging zone (37). Additionally, Raniwala discloses the step of maintaining the sterilant on the surface of the bottle for a period of time sufficient to reduce microorganism concentration on the surfaces to a desired level of sterility.

Furthermore, it is obvious that when the rinsing step of Raniwala is combined with the method of Hada et al. there would be a resulting prescribed standing time after discharging the mist and before starting the rinse inside the container, since Hada et al. would have an additional treatment zone located downstream of the drying and discharging zone on the conveyor system.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hada et al. in view of Raniwala as applied to claim 1 above, and further in view of DE 4212433 A1 to Strohn.

Hada et al. and Raniwala do not specifically teach a step of rinsing the inside of the container that comprises supplying a rinsing fluid heated in to the container.

Strohn discloses a machine for cleaning bottles which comprises several treatment zones. The treatment zones are a series of liquid baths. The first bath has the effect of softening the dirt on the bottles while the second bath is an alkali bath acting like soap. The first two baths are heated to a sterilizing temperature of 58 degrees C. The third bath is a water rinse bath heated to the same

temperature as the first two baths. The bottles are sterilized by heat but the machine avoids melting the plastic bottles (see translated abstract).

Therefore, it would have been obvious to one of ordinary level of skill in the art at the time the invention was made to further modify the invention of Hada et al. and replace the rinse water disclosed by Raniwala with a heated rinse water as taught by Strohn in order to further enhance sterilization of the bottles while they are rinsed.

7. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taggart (U.S. Pat. 6,209,591 B1) in view of Smith et al. (Patent Pub. US 2003/0068251).

Taggart discloses an apparatus and method for sterilizing the interior and exterior surfaces of a container or bottle that is to be filled with a food product. Specifically, the method discloses the step of directing hot sterile air through nozzles (150) into the interior (118) of each bottle (12). The hot sterile air is directed into the bottles for about 24 seconds for activation and removal of sterilant from the interior surface (119) of the bottle (12). To achieve aseptic sterilization, a minimum bottle temperature of about 131 degrees F should be held for at least 5 seconds. The about 24 seconds is adequate time for the bottle (12) to heat up to about 131 degrees F (see column 12, lines 44-65).

Taggart also discloses the step of heating the exterior surfaces of the bottles (12). The sterilization chamber (38) sterilizes the outside surface (34) of each bottle (12) and includes two opposing, interior, perforated walls (72A, 72B).

The perforated walls allow the complete circulation of hot sterile air around the outside surface (34) of each bottle (12) in the sterilization chamber (38). Each bottle (12) is exposed to the hot sterile air in the sterilization chamber (38) or about 24 seconds. This provides sufficient time for the hydrogen peroxide sterilant to break down into water and oxygen, to kill any bacteria on the bottles (12), and to evaporate from the outside surface (34) of the bottles (12) (see column 6, line 34 to column 7, line 15).

Therefore, Taggart teaches that it is known to supply hot air into a container through a nozzle in order to heat the interior of a bottle and furthermore, Taggart discloses that it is known to heat the entire exterior surface of a bottle. This includes heating the mouth portion of the bottle. However, Taggart does not teach a nozzle that is inserted in the container.

Smith et al. discloses a method of sterilizing a container using a sterilant such as hydrogen peroxide. A vapor generator (22) generates hydrogen peroxide vapor which is then passed into a heated, moisture free stream. The hydrogen peroxide vapor then flows through sterilant supply passage (24) to delivery valve (40). In operation, the container to be sanitized or sterilized is positioned in dose chamber (14) and nozzle (50) is inserted into an opening of the container. Delivery valve (40) is actuated to deliver a dose of sterilant vapor through nozzle (50) into the container. After a predetermined wait period, delivery valve (40) is actuated once more to deliver a supply of heated air into the container to flush out the sterilant from the container (see paragraphs [0049] to [0053]).

Additionally, Smith et al. disclose that it has been discovered that after nozzle (50) has been inserted into the container, the extent of the insertion of the nozzle impacts performance. The sterilization process optimization depends on proper positioning of the dose nozzle within the container. The positioning of the nozzle impacts the delivery of the hydrogen peroxide sterilant and removal of residual peroxide by purging with heated air (see paragraph [0074]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Taggart and insert the nozzle into the interior of the bottle during the step of supplying heated air in order to optimize the heating of the bottle and removal of the sterilant as taught by Smith et al.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patent Application Publication US 2002/0159915 A1 to Zelina et al.

U.S. Pat. 5,368,828 to Carlson

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean Conley, whose telephone number is (703) 305-2430. Beginning December 16, 2003, the examiners phone number will change to (571) 272-1273. The examiner can normally be reached on Monday-Friday 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Robert Warden, can be reached at (703) 308-2920. The Unofficial fax phone number for this group is (703) 305-7719. The Official fax phone number for this Group is (703) 872-9310. The direct fax number to the examiner is (703)-746-8859. Beginning December 16, 2003, the direct fax to the examiner will change to (571)273-1273.

When filing a FAX in Technology Center 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of the application. This will expedite the processing of your papers.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [robert.warden@uspto.gov]. All Internet e-mail communications will be made of record in the application file. PTO employees will not communicate with applicant via internet e-mail where sensitive data will be exchanged or where there exists a possibility that sensitive data could be identified unless there is of record express waiver of the confidentiality requirements under 35 U.S.C. 122 by the applicant. See the Interim Internet Usage Policy published by the Patent and Trademark Office Official Gazette on February 25, 1997 at 1195 OG 89.

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Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist, whose telephone number is (703) 308-0661.

Sean E. Conley
Patent Examiner
AU 1744

SEC *te*
December 11, 2003

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